

## NEW AUSTRALIAN SAWFLIES (*Hymenoptera*, *Symphyla*).

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I have lately had the opportunity of studying a most interesting collection of sawflies from the Queensland Museum. The collection, of approximately 150 specimens, contained representatives of at least 15 new species; 13 of these are described in the present paper, while the descriptions of two others will appear later elsewhere.

One new genus is described *Styracotechys*, and for this *Styracotechyinae* a new subfamily of the *Pergidae*, had to be erected. Keys to a new classification of the *Pergidae* are included so as to show the position of this new subfamily in relation to the other subfamilies, and in the keys a new subfamily *Paralypiinae* is also instituted for the South American *Paralypia* and allied genera. Mention should also be made here to one further addition to the Australian fauna in *Senoclidea? furvus* Konow from Port Darwin. This species was previously known only from New Guinea.

The richness of this material, which was collected in the field mostly by Mr. H. Hacker, Entomologist of the Queensland Museum, suggests that there are still many more new species of sawflies yet to be found in Australia.

### ARGIDÆ.

#### ANTARGIDIUM Morice.

I lately redefined this genus, Benson 1934 (1), and described two new species; in the present collection there are two more new ones, both having in the hind wing the recurrent vein nearer to the base of the wing than the cubital, so that the discoidal cell is smaller and shorter than the cubital as it is in *Antargidium allucente* Benson, fig. 1 of that paper, though the exact position of the recurrent vein is different in three specimens of one of the species. It now appears that the exact position of these veins differs in individuals of the same species, and probably, if long series could be examined, would be found to be of no significance in separating the species. A comparison of the saws of the new species with the three already described shows that the saw figured for *A. allucente* Benson, fig. 7 in my previous paper, is in some respects not typical for the genus; in all four other species the hair bands are replaced by a row of short broad-based spine (see figs. 1 and 2), and the denticulations are of the pattern illustrated in fig. 9 of that paper, although differing in detail. Furthermore the saw of *A. allucente* Benson was not figured

quite accurately, as further examination has revealed that it also has got a few broad-based spines obscured by the hairs in the hair-bands; these spines are not easily visible and were overlooked before.

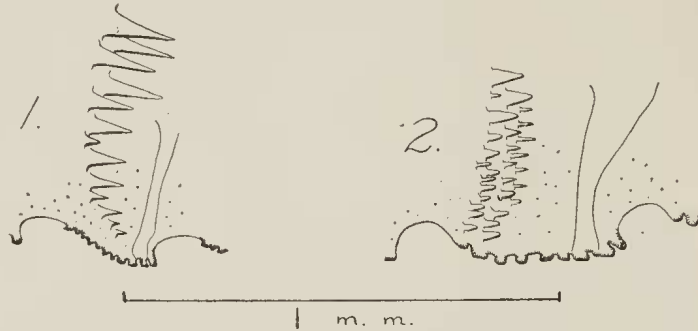


Fig. 1.—*Antargidium atriceps* sp. nov., tenth tooth of saw.

Fig. 2.—*A. rufum* sp. nov., tenth tooth of saw.

**ANTARGIDIUM ATRICEPS** sp. nov.

♂ ♀ *Colour*.—Yellow; black are the head (except palps and the tips of the mandibles), the meso- and meta-notum, a large spot on the mesopleura, the mesosternum, and the 6 apical segments of the abdomen except the base of the sawsheath in the ♀; apex of hind tibia and all tarsal segments slightly fuscous. Wings infuscate throughout; stigma and venation black.

*Length*.—♀ 5.5 to 6.5 mm.; forewing 5.5 to 6.5 mm.; antenna 1.7 to 2 mm.:

♂ 6 mm.; forewing 6 mm.; antenna 2.5 mm.

*Puncturation*.—Rugulose on face; rest of insect shining and unpunctured. *Head*: malar space about two-thirds length of pedicel of antenna; pedicel about two-thirds as long as broad; supra-elypeal area with a well-developed carina reaching from clypeus to frontal area where it divides into 2 branches which surround the pear-shaped median fovea; ocellar basin deep, including front ocellus and surrounded by a pentagonal wall. *Legs*: with hind basitarsus about as long as three following tarsal segments together. *Wings*: recurrent vein in hind wings nearer to the base of the wing than the transverse-cubital vein, so much so that the recurrent vein is twice as far from the apex of the cubital vein as the transverse-eubital vein is. *Abdomen*: hind margin of hypopygium entire; sawsheath as in *A. allucente* Beuson; saw fig. 1.

New South Wales, Tamborine, 1 ♀, 1 ♂ (holotype and allotype), 21-ii-1927, H. Hacker (Queensland Museum); Queensland. Conondale 1 ♀, 7-i-1930, H. Hacker (British Museum); and a variety in which the transverse eubital vein is only about two-thirds as far from the apex of the eubital vein as the

recurrent vein (indicating that the positions of these veins are more liable to variation than was at first thought) and in which the black pigment is less widespread, so that the front and sides of mesonotum together with the scutellum and the metanotum are yellow, while the dark mark on the mesopleura is much smaller. Queensland, National Park, 1♀, xi-1920, H. Haeker (Queensland Museum).

This species is separated from all others in the genus by the black head in both sexes, the very pale legs, and the earina on the face reaching right to the front of the supraelypeal area; the sawsheath is most like that of *A. apicale* W. F. Kirby, but the dorsal tooth is not so sharp when viewed from the side.

**ANTARGIDIUM RUFUM** sp. nov.

♀ *Colour*.—Reddish yellow all over, except the tibiae and tarsal segments which are infuscated. Wings, infuscated throughout; stigma and venation black. *Length* 6.3 mm.; forewing 6.3 mm.; antenna 2.5 mm. *Puncturation* obsolete. *Head*: malar space about half as long as pedicel of antenna; pedicel about two-thirds as long as broad; supraelypeal area with the medial earina present on the hind two-thirds of the area, but not sharp, the front one-third is simply rounded; frons as in *A. atriceps* sp. nov. *Legs* with the hind basitarsus distinctly longer than the three following tarsal segments together. *Wings*: recurrent vein in the hindwing nearer to the base of the wing than the transverse-eubital vein, as in *A. allucente* Benson (Benson 1934 (1), fig. 1). *Abdomen*: hind margin of hypopygium entire; sawsheath as in *A. dentivalvis* Benson, but set up almost erect; saw fig. 2.

New South Wales, Tooloom, 2♀♀, i-1920, H. Haeker (holotype in Queensland Museum; paratype in the British Museum).

This species is distinguished from all others by the head and body being entirely reddish-yellow, and by the very short almost linear malar space. The sawsheath comes nearest to that of *A. dentivalvis* Benson, but it is set up almost erect, whereas in that species the sawsheath is not so set.

**ANTARGIDIUM ? DENTIVALVIS** Benson.

One female, Queensland, Townsville, Dr. H. Priestly, in bad condition, probably belongs to this species. It differs from the type in being larger (4.5 mm. instead of 4 mm.), in the sawsheath being set up erect at the apex and in the transverse-eubital vein in the hind-wing not being interstitial with the recurrent vein, but received on the eubital nearer the apex of the wing as in *A. allucente* Benson and typical *Arge*.

## TENTHREDINIDÆ.

## SENOCLIDEA ? FURVUS Konow.

*Monophadnus furvus* Konow, Wein ent. zt. xvii, 1898 : 232. North Australia, Port Darwin, 1♀, F. P. Dodd.

This species, previously known only in New Guinea, is a very interesting addition to the Australian sawfly fauna as it represents the first true Australian Tenthredinid (not counting, of course, *Caliroa lima-ina* Retz., which is obviously an alien that has been introduced with fruit trees into a great many parts of the world).

## PTERYGOPHORIDÆ.

## CLARISSA FLAMMEA, sp. nov.

♀ *Colour* reddish-yellow; head black except for the pale mouth-parts, clypeus, supra-clypeal area, and antennæ; a large cream-coloured spot covering the hind half of the outer quarter of abdominal tergum 2. Wings hyaline, slightly infuscate at the apex; veins at extreme base of wing, including basal half of costa yellow; rest of veins infuscate; stigma infuscate, with a pale transparent basal patch.

*Length* 6 mm.; forewing 5.5 mm.; antenna 2 mm.

*Puncturation*.—Head [and thorax dull with fine surface puncturation becoming rugulose on head; abdomen rugulosely sculptured. *Head*: mouthparts normal; malar space about as long as pedicel; antenna 11-segmented; subelavate pedicel a little longer than broad; segment 3 = 4 + 5 in length; only segments 9 and 10 broader than long; median fovea as a slight rounded depression. *Legs*: hind-basitarsus about equal to three following tarsal segments. *Abdomen*: with sawsheath normal; saw fig. 3.

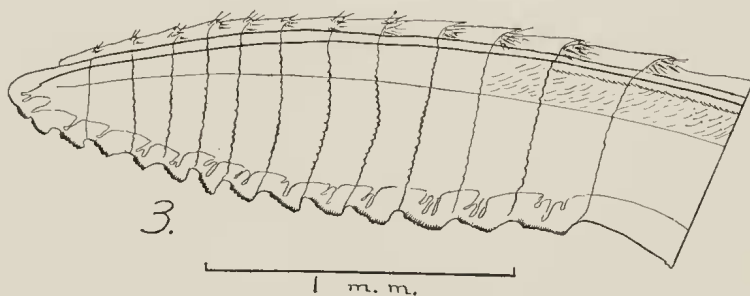


Fig. 3.—*Clarissa flammea* sp. nov., saw.

Queensland National Park, 1♀, 25-x-1923, H. Haeker (Queensland Museum).

This species is superficially very similar to *C. divergens* W. F. Kirby, and would run to that species in my key—Benson 1934 (2) p. 469. Externally

it is only distinguishable on colour characters, the thorax and abdomen being all red, while in *C. divergens* W. F. Kirby the mesepimeron, mesosternum, and metapleuræ together with the last two or three abdominal segments are black, and the costa being yellow at the base instead of all black. The saw is however quite different; it is more like the saw of *C. flavicornis* Benson (Benson 1934 (2) fig. 6a). The waved ridges on the side of the saw, however, suggest a link between the saw of *C. flavicornis* Benson and the spiny-ridged saw of *C. ruficollis* Benson.

*Clarissa* males.

In the collection were males belonging to four different species of this genus, but none of them seemed to belong to any of the described females. I have with some diffidence then described four new species based on the male sex only, which are separated in the key that follows from the already known males of *C. atrata* G. Turner and *C. divergens* W. F. Kirby. The male genitalia in this group seem to exhibit but slight and insufficient differences to be relied on yet for separating the species.

1. Pedicel clearly broader than long..... 5  
    Pedicel longer than broad..... 2
2. Head and thorax metallic greenish-black; abdomen, except tergum 1, entirely reddish yellow; hind legs all black. Eyes strongly converge in front so that the malar space is linear..... *diana* sp. nov.  
    Head and thorax shining black without metallic tinge; abdomen, only yellow banded, being black at base and apex; at least hind tibia mostly yellow. Eyes converge in front, but malar space is still at least half as long as the diameter of an ocellus..... 3
3. Flagellum of antenna yellow; the segments each being strongly swollen apically. Punctuation on temples and thorax very fine, almost obsolete. Wings slightly infuscate..... *lucida* sp. nov.  
    Antenna all black; the segments not noticeably swollen out apically. Punctuation on temples very fine and close.  
    Wings hyaline..... 4
4. Abdomen with whole of segments 2, 3 and often part of 4 yellow..... *divergens* W. F. Kirby.  
    Abdomen with only apices of segments 2, 3 and 4 yellow..... *atrata* G. Turner.
5. Flagellum of antenna together with a band on abdomen and legs (except coxæ, trochanters and tibial spurs) yellow. Inner apical spur to hind tibia, about half as long as hind basitarsus..... *antennata* sp. nov.

Antenna, abdomen and for the most part the hind legs black. Inner apical spur to hind tibia almost as long as hind basitarsus.  
 ..... *obscura* sp. nov.

**CLARISSA DIANA** sp. nov.

*Colour*.—Metallic greenish-black; yellow are on the fore legs, the front of the femur, the tibia and tarsi, on the middle legs a spot on the apex of the femur, and the whole of the abdomen except tergum 1. Wings slightly infusate throughout; veins and stigma black.

*Length* 4.7 mm.; forewing 4.5 mm.; antenna 2.2 mm.

*Puncturation*: head with very fine regular surface puncturation, but shining between the punctures; the punctures are visible also on the prothorax, but on the mesonotum and mesopleuræ the punctures are apparent only at the sides of the lobes, the middles of the lobes being unpunctured smooth and shining; abdomen with normal rugulose transverse sculpturing.

*Head* with eyes strongly converging in front so that they almost touch the side of the clypeus and the base of the mandible, leaving but a linear malar space; length of clypeus and labrum together equals the breadth of the clypeus; antenna 9-segmented; distinctly clubbed from the apex of segment 4; segment 2 (pedicel) longer than broad; median fovea as a long groove, joining the frontal furrow and reaching back to the front ocellus behind.

*Wings* as in *Clarissa divergens* W. F. Kirby, but in the unique type the first transverse cubital nerve is absent in the forewing.

*Legs* with inner spur on apex of hind tibia about half as long as hind-basitarsus; hind-basitarsus about equal to 2 following segments in length.

*Abdomen* with apex upturned; hypopygium entire behind.

Queensland, Nanango District, 1 ♂, xi-1927, H. Hacker (Queensland Museum).

**CLARISSA LUCIDA** sp. nov.

♂ *Colour* black; yellow are the labrum, flagellum of antenna, angles of pronotum behind, legs (except the infusate coxæ, trochanters and tibial spurs) and a band on the abdomen covering terga 2-4 and sterna 2-5. Wings infusate; stigma black with a paler base; costa and venation black basally but brownish apically.

*Length* 6.5 mm.; forewing 5.5 mm.; antenna 3.5 mm.

*Puncturation* fine dense and regular on face and frontal region, but obsolete on the temples whose surface is smooth and shining; obsolete also on

most of the thorax especially the lobes of the mesonotum where sparse vague punctures are only apparent in the hollows and at the sides; abdomen transversely rugulose.

*Head*: length of clypeus and labrum together about equals breadth of clypeus; malar space about as long as two-thirds the diameter of an ocellus; antenna 12-segmented, not club-shaped, but subserrate, the segments from 4 onwards being of equal breadth apically, but each one being very broad apically and narrow basally, so that the breadth basally is about two-thirds the breadth apically; median fovea as a deep rounded depression; vertical furrow clearly marked.

*Legs* with hind basitarsus equal to three following tarsal segments together; inner hind tibial spur about five-sevenths length of basitarsus; *Abdomen* with hypopygium set up erect, with the hind margin slightly two-lobed, being emarginate in the middle.

New South Wales, Toooloom, 2 ♂♂, i-1926 H. Hacker (holotype in Queensland Museum, paratype in British Museum).

**CLARISSA ANTENNATA** sp. nov.

*Colour* black: yellow are labrum flagellum of antenna hind angles of pronotum, legs (except coxæ trochanters and tibial spurs), a band on abdomen covering terga 2-4 and sterna 2-5 and the apex of the hypopygium. Wings almost hyaline, slightly infuscate stigma (except for a pale spot at base), costa and venation dark brown.

*Length* 5.5 mm.; forewing 5 mm.; antenna 4 mm.

*Puncturation* on head fine dense and irregular, though on the clypeus and temples small unpunctured spaces occur between the punctures; pro- and mesonotum shining between scattered regular punctures; meso-pleuræ with regular very fine surface punctures; abdomen transversely rugulose dorsally.

*Head*: length of clypeus and labrum together about equal to breadth of clypeus; clypeus entire on front margin; malar space as long as the diameter of an ocellus; antenna 12-segmented not club-shaped; the breadth of segments 4 onwards being the same apically; pedicel clearly broader than long; segments from 4 onwards slightly broadened apically; median fovea as a deep rounded depression; vertical furrows very distinct. *Legs* with hind basitarsus equal to 2 following tarsal segments together in length; inner hind-tibial spur about five-sevenths as long as hind basitarsus. *Abdomen* with hypopygium normal in position, excised in middle on hind margin, and slightly emarginate each side.

Queensland, Tamborine Mountain, 1 ♂, W. H. Davidson (Queensland Museum).

**CLARISSA OBSCURA** sp. nov.

*Colour* black; pale brown are the labrum, front margin of elypeus, the front legs (except base of femur, trochanters and coxa) the middle and hind tibiæ apically as well as the tarsal segments at their joints. Wings slightly infuscate; stigma and venation black, except basal half of costa which is brownish.

*Length* 6 mm.; forewing 5.5 mm.; antenna 4 mm. though the Brisbane specimen is 8 mm.; forewing 6.2 mm.; antenna 4.5 mm.

*Puncturation* on head dense, shallow and irregular, on nota of thorax in the form of regular round scattered punctures with shining smooth spaces between; the punctures are thicker at the sides of the lobes of the mesonotum and the scutellum, but sparser in the middle of the mesonotal lobes; on pleuræ and sterna the puncturation is irregular and shallow; on the abdomen the dorsum is transversely rugulose.

*Head*: length of elypeus and labrum together equal to about the breadth of the elypeus; elypeus emarginate in the middle of the front margin; malar space in length about two-thirds the diameter of an ocellus; antennæ 14-15 segmented, not club-shaped, increasing in breadth slightly until about segment 6 or 7, and then tapering slightly; funicle and pedicel very short; pedicel about twice as broad as long; segments 4 and onwards being each much broader apically than basally, the basal breadth being about two-thirds of the apical breadth; median fovea as a deep rounded depression; vertical furrows clearly defined. *Legs* with hind basitarsus equal to two following tarsal segments; inner hind tibial spur in Brisbane specimen equals about five-sixths length of basitarsus, in other specimens almost equals basitarsus in length. *Abdomen* with hypopygium set up erect, and entire on hind margin.

Queensland, 3 ♂♂ (including Holotype) Tamborine Mountain, W. H. Davidson; 1 ♂ Brisbane, 7-xii-1924, H. Hacker (holotype and one paratype Queensland Museum, two paratypes in British Museum.)

**DIPHAMORPHOS PALLICORNIS** sp. nov.

*Colour* black; yellow are labrum, elypeus in front, antenna, pronotum, tegula, a longitudinal band in the middle of the mesonotum covering the whole of the front lobe, and the middle of the side lobes, sides of scutellum and upper part of mesopleuræ, legs except the coxæ at their bases, and the neighbourhood of the sawsheath.

*Length* 5 mm.; forewing 4.5 mm.; antenna 1.5 mm.

*Puncturation*: head (except elypeus and labrum which are smooth) with a rough surface, dull but without regular punctures; behind the temples the



sculpturing is denser; on the thorax the roughness is absent in the middle of mesonotal lobes and scutellum which are perfectly smooth and shining; abdomen transversely rugulose.

*Head*: clypeus entire; malar space very short, about half the diameter of an ocellus in length; antenna (fig. 4a) 10-segmented; pedicel about as long as broad; segment 3 greater in length than  $4 + 5$ ; flagellum setiform; no segment broader than long; median fovea well marked as a deep depression.

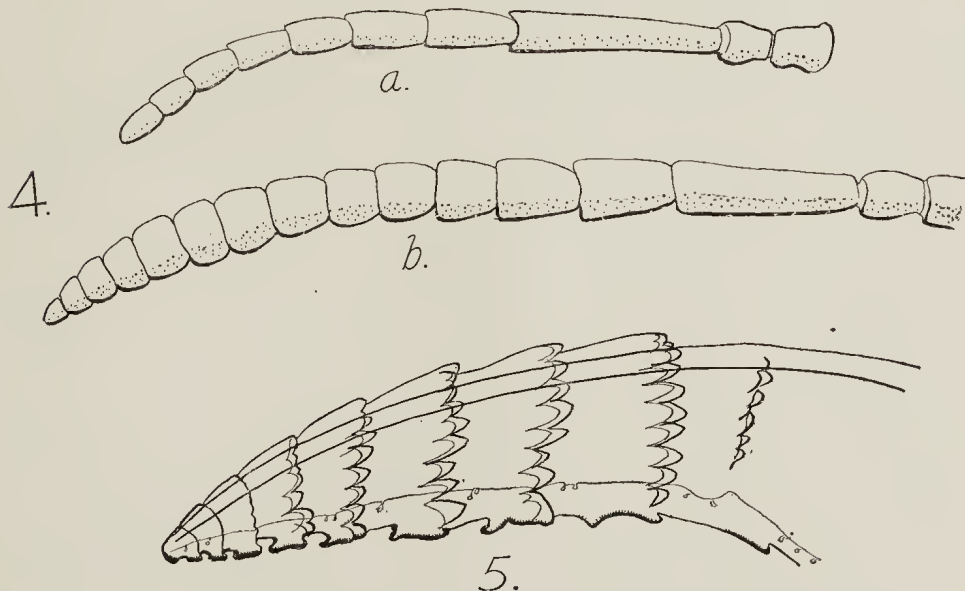


Fig. 4.—Antenna of (a) *Diphamorphos pallicornis* sp. nov., (b) *D. minor* Rohwer.

Fig. 5.—*D. pallicornis* sp. nov., saw.

*Legs* with hind basitarsus equal in length to three following tarsal segments together.

*Abdomen*.—Hypopygium with a triangular area, lightly chitinized, in the middle of the hind margin; sawsheath viewed from above small and slightly emarginate apically with curved hairs; saw fig. 5.

New South Wales, Tooloom, 2♀♀, i-1926, H. Hacker (holotype in Queensland Museum, paratype in British Museum).

This species is at once distinguished from the three previously described in the colour and form of its antennæ which are yellow, only 10-segmented, setiform, with no segments broader than long (cf. fig. 4a and b). For a key to the previously described species see Benson 1934 (2): 471. The saw and sawsheath are typical also for the other known species in this genus.

**NEOEURYS BREVIVALVIS** sp. nov.

♀ *Colour* metallic black with a slightly greenish tinge on head and thorax; yellow are mandibles, front of labrum, all the sterna including hypopygium of abdomen as well as the lateral portions of the terga, and the apices of the femora: rest of legs yellowish white infuscated on apices of tarsal segments. Wings hyaline; stigma pale brown with basal half white; venation brown.

*Length* 4.8 mm.; forewing 4.5 mm.; antenna 1.2 mm.

*Puncturation*.—Head and thorax shining unpunctured except for small hair follicles; abdomen transversely rugulose.

*Head*.—Clypeus with front margin entire; malar space about as long as apical breadth of pedicel; antenna 9-segmented, subelavate; pedicel longer than broad (in proportion of about 5:3); median fovea deep in front, continuing back as a groove as far as front ocellus. *Legs* with hind basitarsus about equal to three following tarsal segments in length.

*Abdomen* laterally compressed and from the side appears truncate at the apex because the sawsheath is set up erect (fig. 6a); saw of normal type but simplified (fig. 6b).

Queensland, Brisbane, 1♀ (Holotype), 17-ix-1914, and 1♀ (paratype), 8-ix-1915, H. Hacker (holotype in Queensland Museum, paratype in British Museum).

This species would run down in my key to *N. ventralis* Forsius (Tasmania), which is a larger species in which the sawsheath is normal in position and the saw is more complex (see Benson 1934 (2) p. 476, fig. 6f for sawsheath and fig. 9b for saw).

**NEOEURYS AURORA** sp. nov.

♀ *Colour*: metallic black with green reflections on head and thorax; yellow are mandibles and labrum, flagellum of antenna on underside from apical half of segment 4, apex of femora, tibiae and on front and middle legs bases of, all tarsal segments on hind legs, only basal half of basitarsus, and apex of abdomen from segment 7, except the medial dorsal portion of segment 7 and 8. Wings hyaline, stigma light brown at the apex with the basal half white, venation brown.

*Length* 3.5 to 4 mm.; forewing 3.5 to 4 mm.; antenna 1.3 mm.

*Puncturation*.—Head and thorax dull with a rough coriaceous surface, actual punctures being for the most part ill-defined and irregular.

*Head*.—Clypeus entire in front; malar space about as long as apical breadth of pedicel; antenna 10-segmented, subclavate; pedicel longer than broad (in proportion of about 5:3); median fovea deeply impressed and

continuing back as a shallow groove as far as front ocellus. *Legs*.—Hind basitarsus about equal in length to three following tarsal segments.

*Abdomen* laterally compressed and almost truncate when viewed from the side (fig. 7a), because the sawsheath is set up in an erect position almost as much as in *N. brevivalvis* sp. nov.; sawsheath from above appears as in *N. caudata* Morice (Benson 1934 (2), fig. 8c), but the hairs each side are straight; saw fig. 7b.

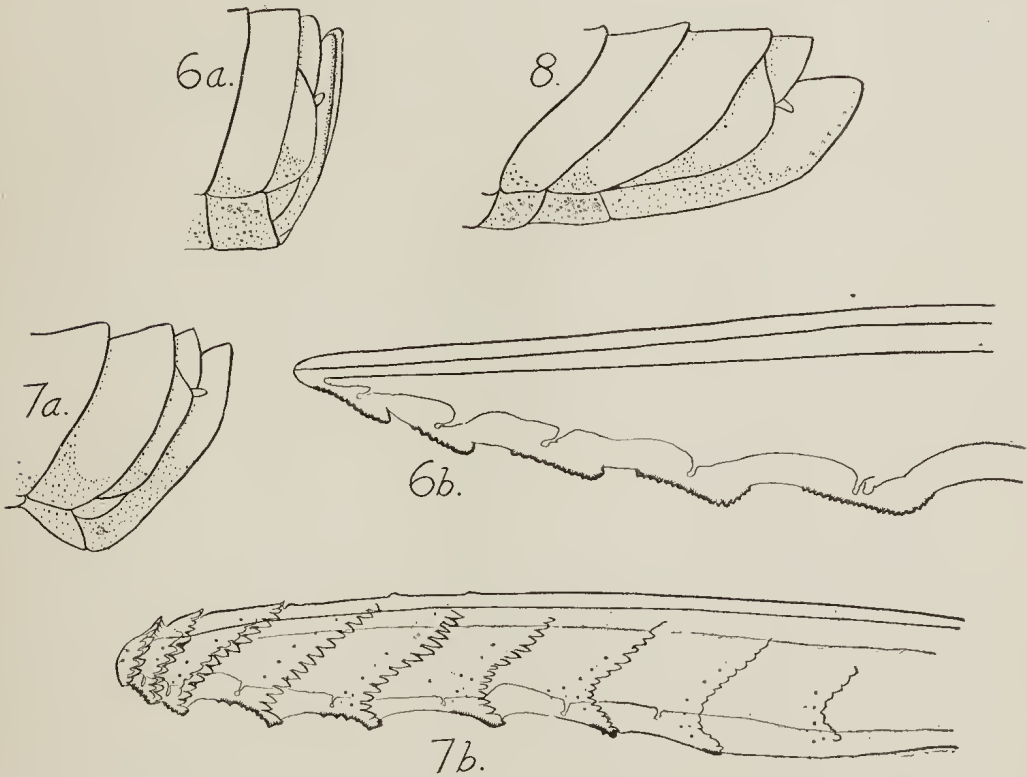


Fig. 6.—*Neocourys brevivalvis* sp. nov.:

- (a) apex of the abdomen of the female from the side;  
(b) saw.

Fig. 7.—*N. aurora* sp. nov.:

- (a) apex of the abdomen of the female from the side;  
(b) saw.

Fig. 8.—*N. caudata* Morice, apex of the abdomen of the female from the side.

Queensland, Stanthorpe, 2 ♀♀, 12-viii-1925 (holotype in Queensland Museum, paratype in British Museum).

This species would run to *N. caudata* Morice (Tasmania) in my previous key and superficially is rather like that species. *N. caudata* Morice is, however, much larger, has black mandibles, labrum and antennæ, has a malar space decidedly longer than the pedicel, has a sawsheath in normal position (not erect) (cf. figs. 7a and 8), curved hairs on the side of the sawsheath when viewed from above, and different saw (see figure in my previous paper). The saw of *N. aurora* sp. nov. is unlike any other previously met with in the genus and is more like that of a typical *Diphamorphos* sp., and, from its strong build and arrangement of spiny projections, suggests that the species oviposits in some coarse plant tissue.

Both *N. aurora* sp. nov. and *N. brevis* sp. nov. differ from all previously described. *Neoeurys* in the peculiar erect position of the sawsheath and the slightly shorter malar space.

#### PERGIDÆ.

For one of the most interesting specimens in the collection it was found necessary to erect a new genus and subfamily. In order to place the new subfamily the following system of classification is put forward provisionally. The system is convenient at present, but, no doubt, when more genera are discovered, it will prove to be inadequate.

1. Radial cell in hind wing open at apex; cubitus and cubital veins forming the apex of the subcostal cell in hindwing are in one straight line and transverse.

[Eyes converge in front leaving a linear malar space; propodeum is deeply emarginate behind, leaving exposed a large poorly chitinized area; antennæ very short, of not more than 6 segments in all, and threadlike. 1st transverse cubital vein missing.]

Genera: *Acordulecera* Say, *Ceratoperia* Enderlein and *Thulea* Say (South American region),..... ACORDULECERINÆ.

- Radial cell in hind wing closed at apex; cubitus and cubital veins forming apex of the subcostal vein in hindwing are not in one straight line, the cubitus being longitudinal..... 2
2. Abdomen long and tapering posteriorly; in ♀ tergum 9 elongate. Head twice as broad as high when viewed from in front; ♂ antenna with apical dorsal projections to segments. Eyes almost round when viewed from side and set far away from mandibles leaving a malar space about as long as half the diameter of an eye! Antennæ set behind the clypeus at a distance of about the length of the malar space. Forewing with 1st recurrent vein

bent at a right angle in the middle, so that, whereas the hind or inner portion of the vein runs towards the base of the stigma, the front or outer portion runs towards the apex of the wing and joins the cubital vein near the middle of the 2nd cubital cell (see Morice 1919, plate xi, fig. 6).

[Propodeum only slightly emarginate behind. Larvæ leaf miners in *Eucalyptus*.]

Genus: *Phylacteophaga* Froggatt (S. Australia),..... PHYLACTEOPHAGINÆ.

- . Abdomen normal. Head normal. Antennæ in ♂ without dorsal projections to segments. Malar space short, little more than length of pedicel at the most. Antennæ set very close to hind margin of clypeus. Forewing with the first recurrent vein straight throughout and subparallel with basal vein..... 3
3. Forewing with petiolate anal cell present. [Small species under 5 mm. in length. Antenna 14-segmented. Basal vein in forewing joins costa at junction of cubital and costa; 1st transverse cubital vein missing. Propodeum strongly emarginate behind leaving exposed a large semi-circular blotch of poorly ehitinized surface.]

Genus: *Styracotechys* gen. nov. (Queensland), STYRACOTECHYINÆ (subfamily new).

- . Forewing without anal cell..... 4
4. Forewing with basal vein received on costa at junction of costa and cubital vein.  
1st cubital vein subequal with 2nd; 1st transverse cubital vein at less than a right angle with 2nd. Mostly large species over 8 mm. in length, with antennæ (except in *Cerealces*) short and club-shaped. Propodeum not strongly emarginate behind so that the blotch is very small.]

Genera: *Cerealces* W. F. Kirby, *Perga* Leach and *Xyloperga* Shipp (Australia) ..... PERGINÆ.

- . Forewing with basal vein received on cubital at a short distance from where the cubital leaves the costa; the portion of the cubital between the junction with the basal and the junction with the costa (*i.e.*, the cubitus) is bent back towards the apex of the wing and is in a straight line with the basal vein..... 5
5. Forewing with 1st cubital cell very short (broader than long); 1st transverse cubital vein set at right angles to 2nd..... 6

-. Forewing with 1st cubital cell subequal with 2nd in length and clearly longer than broad; 1st transverse cubital vein set at much less than a right angle to the 2nd. [Palps of mouthparts generally much reduced; antennæ short, subclavate, with regular annular segments. Preapical spines to middle and hind tibiæ very short. Forewing generally with 4 cubital cells of which the 2nd receives both recurrent veins. Propodeum strongly emarginate behind in the middle leaving a large blotch as in *Acordulecera*.]

Genera: *Acorduleceridea* Rohwer, *Giladeus* Brethes, *Lagideus* Konow and *Paralyptia* Kirby (South American Region)..... PARALYPTINÆ subfamily new.

6. Antenna short, not more than 8-segmented, tending to become clavate; segments normal. Propodeum not emarginate behind.

Genera: *Incalia* Cameron, *Parasyzygonia* Rohwer, *Syzygonia* Klug and *Syzygonidea* Ashmead (South America Region)..... SYZYGONINÆ.

-. Antenna long, many segmented (15-22); each segment broader apically than basally so that it is triangular in shape. Propodeum emarginate behind, leaving a blotch, though this is sometimes chitinized and not easy to distinguish.

Genera: ? *Cerospastus* Konow (Chile) and *Philomastix* Froggatt (E. Australia) ..... PHILOMASTIGINÆ.

#### STYRACOTECHYS genus. nov.

Small broad species (about 4 mm. long).

*Head* very little developed behind the eyes (fig. 9a); mouthparts normal with 4-segmented labial and 6-segmented maxillary palps; eyes converge in front so that malar space is but linear; labrum asymmetrical, and produced on the right side; clypeus very short (shorter than length of pedicel); antennæ very close to hind margin of clypeus (at a distance of about half length of pedicel); antenna short (flagellum being about as long as the breadth of the head); funiculum and pedicel broader than flagellar segments and about as broad as long; flagellum not increasing in breadth apically; basal flagellar segments viewed from the side, with apical margin concave, and with a prolongation beneath (fig. 9b); frontal area with furrows obsolete; ocellar region slightly raised; ocelli arranged nearly in a line, the triangle being very broad based; behind the two hind ocelli is a carina.

*Thorax*.—Pronotum without a clear accessory suture; sternauli separating mesepisternum from mesosternum well developed; third pleural suture angulate in the middle, the angle pointing backwards. Wings as in *Diphamorphos* Rohwer

(see Benson 1934 (2) pp. 464-5) but that the 1st transverse cubital vein is missing and that in both fore and hindwings the apical cell is very much reduced.

*Legs* with exceptionally long apical tibial spurs (fig. 9c); claws simple.

*Abdomen*.—Propodeum very strongly emarginate behind so that there is a large area with a white, weakly chitinized surface between propodeum and tergum 2. Sawsheath (fig. 9d).

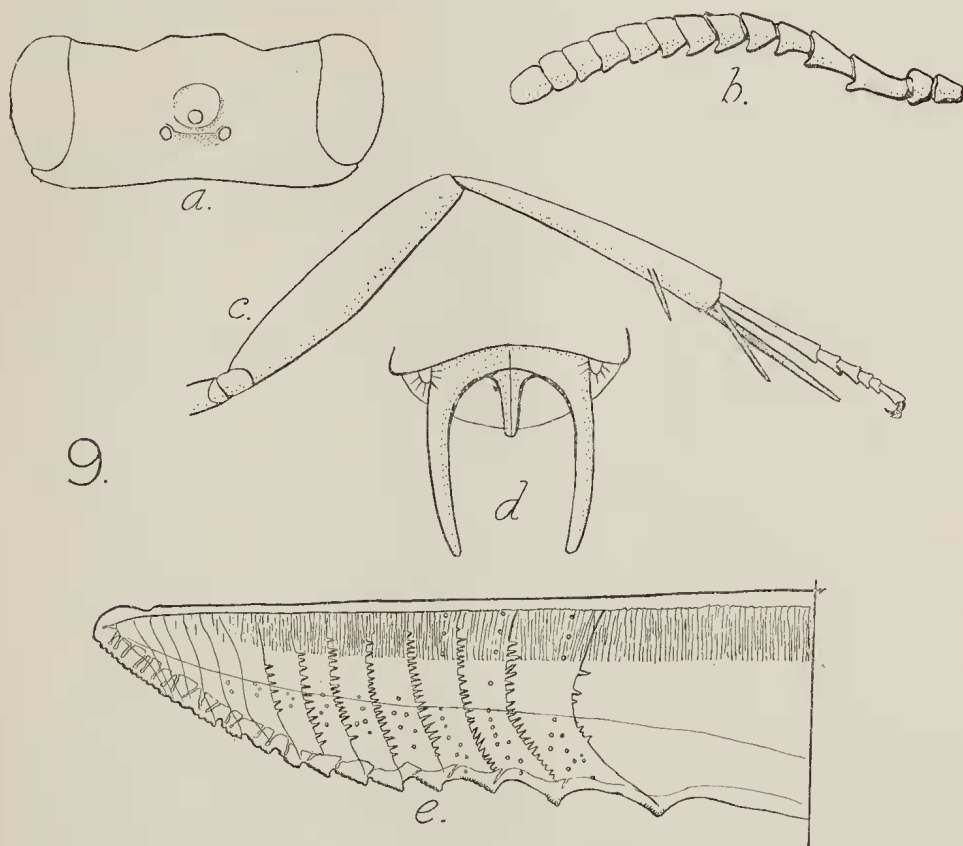


Fig. 9.—*Styracotechys dicelysma* gen. et. sp. nov.:

- (a) Head from above;
- (b) Antenna from the side;
- (c) Hind leg;
- (d) Sawsheath from above;
- (e) Saw.

**STYRACOTECHYS DICELYSMA** sp. nov.

♀ *Colour* yellow; black or fuscous are the head (except for the mouth-parts, clypeus, 4 basal segments of antenna which are brown), the side lobes

and scutellum of mesonotum, the hind tibiæ and tarsi, the abdomen from the middle of the 4th segment with the exception of the sawsheath. Wings hyaline; costa yellow; stigma and rest of venation brown.

*Length* (excluding genitalia) 4 mm.; forewing 4.5 mm.; antenna 1.8 mm.

*Puncturation*.—Surface mostly shining and unpunctured, but on the orbits, and side lobes of mesonotum is in places developed a very fine regular coriaceous sculpturing, and the dorsum of the abdomen is transversely rugulose.

*Pubescence*.—The whole insect, except the dorsum of the abdomen from segment 2, is covered with a fine regular pubescence.

*Head*.—Antenna with 14 segments. (fig. 9b).

*Legs* with long preapical tibial spurs on middle and hind legs; apical tibial spurs exceptionally long: on the middle legs the longer spur is equal to about three-quarters the length of the basitarsus; on the hind legs the longer spur is equal to the length of the 3 following tarsal segments together (fig. 9e).

*Abdomen*.—♀ Sawsheath viewed from above (fig. 9d); saw (fig. 9e).

New South Wales, Tooloom, 1 ♀, 1926, H. Hacker (Queensland Museum).

#### PERGA THOMSONI sp. nov.

♀ *Colour* black; yellow are mouthparts, the face in front of a transverse line on a level with front ocelli and genæ at the sides up to a level with the top of the eyes; on all the legs the tibiæ and tarsi, and on the front legs the apical half of the femur also. Wings hyaline at the base, slightly infuscate at apex from below the stigma; stigma, and venation black.

*Length* 18 mm.; forewing 12.5 mm.; antenna 1.2 mm.

*Head*.—Face shining unpunctured with sparse pubescence; a transverse band from eye to eye, including the ocelli, thickly and finely punctured and covered with dense pubescence; head behind the eyes convex and with coarse scattered punctures and sparse pubescence; mouthparts normal; elypeus slightly emarginate in front; malar space very short, about as long as 3rd segment of antenna; antenna paradoxically short (shorter than distance between antennæ), 6-segmented; pedicellum very short, more than twice as broad as long; flagellar segments all forming a club; segment 3 = 4 + 5; segment 6 longer than rest of flagellum; median fovea as a deep groove stretching back to front ocellus, and with a large flat cushion each side and behind the antennæ; eyes large elongated, concave in the inner side; ocelli far apart so that Pol: Ool in the proportion of 18:13; post-ocellar area bordered at the sides with coarse punctures, and broader than long (in the proportion of about 6 to 5).



*Thorax*.—Mesonotum in front of a transverse line reaching from tegula to tegula is rough, dull, densely and finely punctured and covered with close fine pubescence; rest of thorax is smooth shining with scattered coarse rounded punctures and sparsely haired; scutellum flat, broader than long, with front margin broadly rounded, hind margin swollen a little in the middle, and with sharp slightly produced corners. *Wing* venation normal with the 3rd transverse cubital vein strongly bent in the middle as in *Perga dorsalis* Leach (see Morice 1919, plate xv, fig. 14). Hind legs with tarsal segments together much shorter than tibia.

*Abdomen* with almost obsolete fine rugulose sculpturing, the surface being smooth and polished.

New South Wales, Tooloom, 1 ♀, 12-ii-1922 (H. Hacker).

This very fine new species I dedicate to the great Swedish entomologist C. G. Thomson; this is to continue the policy of Westwood in naming species of *Perga* after Hymenopterists. *Perga thomsoni* sp. nov. would run down in Morice's key to couplet 16 where it will not fit owing to its entirely black thorax. It appears to be closest in structure to *P. christi* Westwood, but the temples are more heavily punctured and the scutellum has definitely angular projections at the hind corners, while in *P. christi* Westwood the projections are rounded. Unfortunately the unique specimen on which the species is based had its abdomen so badly eaten out by *Anthrenus* that the saw was missing.

Morice 1919, p. 265, gave the descriptions of two *Perga* spp. which he could not fit into his key as they had their antennæ missing. In the Queensland collection are representatives of both these species, both having exceptionally short yellow antennæ, so that *P. walkeri* Westwood comes very close to *P. mayrii* Westwood and *P. christi* Westwood as suggested by Morice comes very close to *P. dalbohmi* Westwood and *P. vacillans* Morice. Both *P. walkeri* Westwood and *P. christi* Westwood were recorded from South West Australia by Westwood 1880, p. 368 and 366. In the Queensland Museum collection *P. christi* Westwood is represented by 1 ♀, Queensland, Bunya Mountains, 9-xii-1925 and *P. walkeri* Westwood by 1 ♀, Queensland, Brisbane, Mount Cootha, 20-i-1925, H. Hacker, and 2 ♀♀, North Queensland, Ayr, 30-x-1925, S. Bates.

Either here we have an extraordinary case of distribution or else, what seems more probable, there was some error in the localities recorded by Westwood.

#### **XYLOPERGA PERKINSI** sp. nov.

♀ *Colour* yellow; black are the tips of the antennæ, an ocellar patch, the shortest middle part of the pronotum, the meso- and meta-notum (except the scutellum and the sides of the mesonotal lobes reaching from front angles of the

scutellum to the tegulæ), propodeum and front half of abdominal tergum 2, the lower portion of the mesepisternum together with the mesosternum and mesepimeron and the meta-sternum and metepimeron, the middle of hind coxæ, and the abdominal sterna. Wings tinged with yellow, especially forewings; hind wings nearly hyaline; stigma dark brown; costa and venation brown.

*Length* 17 to 18 mm.; forewing 14 to 15 mm.; antenna 3 mm.

*Pubescence* very sparse, almost entirely absent from head (except mouthparts) and thorax, very short and scattered on ventral surface of abdomen.

*Head*.—Face with sparse coarse punctures; head behind antennæ more strongly punctured especially on depressed borders to postocellar area and temples; malar space about half-length of pedicellum; antenna 7-segmented; about as long as shortest distance between eyes; clavate from apex of 5th segment; distance between the hind ocelli greater than distance from ocellus to eye; median fovea and frontal furrow fused to form a pear shape depressed area including the front ocellus; lateral furrow starts on about a level with the front ocellus and continues back as a slight depression to the vertex; post-ocellar area slightly convex and rounded.

*Thorax*.—Shining all over with coarse scattered rounded punctures becoming dense on the front and side lobes of the mesonotum, especially on the middle of the side lobes, and very sparse on scutellum which is strongly contracted behind, slightly depressed longitudinally in the middle and with very small appendages behind; mesosternum and metapleuræ unpunctured. *Abdomen* with transverse rugulose sculpture.

♂ *Colour*.—Yellow except for the following which are black: tips of mandibles; the ocellar region and a band stretching backwards to the vertex each side of the post-ocellar area; pronotum in front and side lobes of mesonotum (except the raised margins of the side lobes stretching from tegulæ to scutellum); depressed parts of metanotum; dorsal parts of abdominal terga. *Wings* yellowish hyaline with patch of scales (? androconia) occupying sub-costal, first discoidal and first two cubital cells of forewing; stigma brown; tegula and venation yellow in basal half of wings, brown in apical half.

*Length* 13 mm.; forewing 11 mm.; antenna 3 mm.

*Structure* as in female except for wings, genital segments and slightly denser puncturation noticeable on mesopleuræ where between punctures the surface is dull and rugulose.

West Australia, Cunderdin, 2 ♀♀ (including holotype) 3 ♂♂ (including allotype); (holotype, allotype and 1 ♂ paratype returned to Queensland Museum;

1 ♂, and 1 ♀ paratypes in British Museum); 1 ♀ (paratype) var. with abdominal terga 1-7 black in the middle (though at the sides, and on segments 5, 6, and 7, also on the front and hind margins, yellow), returned to Queensland Museum.

This beautiful species is dedicated to Dr. R. C. L. Perkins, F.R.S.

By its rich yellow colour and dark stigma, and by its sparse coarse puncturation with shining spaces between, distinguishable from all other species. The paler form is in colour superficially like *X. aurulenta* Morice and *X. univittata* W. F. Kirby, but both these have a pale stigma, dark hind femora and a densely finely punctured head and thorax. The dark form is rather like *X. amenaida* W. F. Kirby, but this is rather more black in colour and much more sparsely punctured, the head being almost entirely without punctures.

#### REFERENCES.

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